

FREEDMAN et al
Appl. No. 09/437,450
March 15, 2004

AMENDMENTS TO THE DRAWINGS

Attached are 43 sheets of formal drawings.

Attachment: Formal Drawings



Inventor: FREEDMAN et al
SN 08/437,450/Sheet 1 of 43
Atty. Dkt.: 1579-315

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CdCl_2

+

-



Fig. 1



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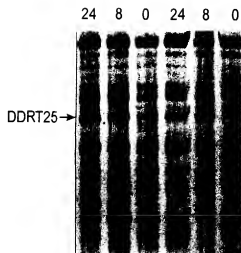


Fig. 2A

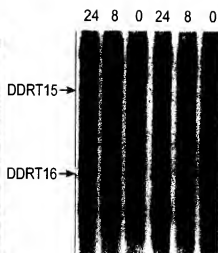


Fig. 2B



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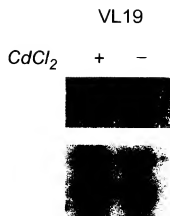


Fig. 3A

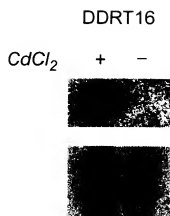


Fig. 3B



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Fig. 4A

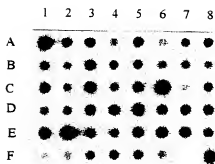


Fig. 4B

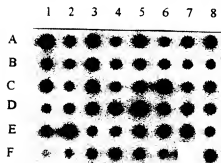
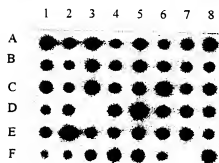


Fig. 4C





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Fig. 5A-1

LOCUS AF072438 284 bp mRNA EST 06-JUL-1998
DEFINITION AF072438 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT21, mRNA sequence.
ACCESSION AF072438
NID g3288944
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 284)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT
Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers
source 1..284
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/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT21"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 88 a 61 c 54 g 81 t

ORIGIN

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1  tggtaactcca caggacaaa tacatttagt tttaacgcc gccacgcgc acgcaacggc
61  cgtaaatcta cccaaggtag aacaacaaca tgtcaagcac agaccatatt ctatttgg
121 cggaaggatg gcctctactg tagtaatcga caattggact ctatccacc ggatcactta
181 acctatttgg atattaaatg gcctgattgg ggatcacagg gttgccccga aaatgtaatt
241 atgaactgaa ttcgaatgt attataaat tagttttat tggg
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//

LOCUS AF072437 214 bp mRNA EST 06-JUL-1998
DEFINITION AF072437 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL8, mRNA sequence.
ACCESSION AF072437
NID g3288943
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 214)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by



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Fig. 5A-2

differential display
JOURNAL Unpublished (1998)
COMMENT
Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers
source 1..214
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL8"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 68 a 37 c 66 g 43 t
ORIGIN

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61 aggaggccag tgagaaaaaa tgctgtccag ctggatgtaa gggagactgc aagtgtgcaa
121 actgtcattg tgcagagcag aagcagtgcc agacaagacc catcaacc aggggaactgc
181 tgcgctcat taaatgttt cagagttgaa tcta

//

LOCUS AF072436 217 bp mRNA EST 06-JUL-1998
DEFINITION AF072436 mRNA from cadmium-responsive gene Caenorhabditis elegans
cDNA clone VL7, mRNA sequence.

ACCESSION AF072436

NID g3288942

KEYWORDS EST.

SOURCE Caenorhabditis elegans.

ORGANISM Caenorhabditis elegans

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.

REFERENCE 1 (bases 1 to 217)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.

Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers
source 1..217
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL7"
/clone_lib="mRNA from cadmium-responsive gene"



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Fig. 5A-3

/tissue_type="whole animal"
/dev_stage="mixed population"
BASE COUNT 69 a 37 c 66 g 45 t
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1 tttagcaagt cggagacaaa tgtgaatgca gtagagacaa gtgtgtgag aagtactgct
61 gtgaggaggc cagtggagaaa aaatctgtc cagctggatg taaggagagac tgaagtgtg
121 caaactgtca ttgtgcagag cagaagcagt gcgagacaag acccatcaac accaggggac
181 tgcgcggct cattaaaatg tttagagtt gaacta
//
LOCUS AF072435 217 bp mRNA EST 06-JUL-1998
DEFINITION AF072435 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL15, mRNA sequence.
ACCESSION AF072435
NID g3288941
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 217)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
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Email: jonf@duke.edu.
FEATURES Location/Qualifiers
source 1..217
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL15"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"
BASE COUNT 69 a 37 c 66 g 45 t
ORIGIN
1 tttagcaagt cggagacaaa tgtgaatgca gtagagacaa gtgtgtgag aagtactgct
61 gtgaggaggc cagtggagaaa aaatctgtc cagctggatg taaggagagac tgaagtgtg
121 caaactgtca ttgtgcagag cagaagcagt gcgagacaag acccatcaac accaggggac
181 tgcgcggct cattaaaatg tttagagtt gaacta
//
LOCUS AF072434 216 bp mRNA EST 06-JUL-1998
DEFINITION AF072434 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL12, mRNA sequence.
ACCESSION AF072434
NID g3288940



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Fig. 5A-4

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 216)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
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JOURNAL Unpublished (1998)

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FEATURES Location/Qualifiers

source 1..216

/organism="Caenorhabditis elegans"

/strain="N2"

/db_xref="taxon:6239"

/clone="VL12"

/clone_lib="mRNA from cadmium-responsive gene"

/tissue_type="whole animal"

/dev_stage="mixed population"

BASE COUNT 69 a 37 c 66 g 44 t

ORIGIN

1 tagcaagtgc ggagacaaat gtgaatgcag tggagacaag tgtgtgaga agtactgctg
61 tgaggaggcc agtgagaaaa aatgctgtcc agctggatgt aaggggagact gcaagtgtgc
121 aaactgtcat tgtgcagagc agaagcagtg cgagacaaga cccatcaaca ccaggggaact
181 gctcggctc attaaaatgt ttcagagttg aatcta

//

LOCUS AF071399 240 bp mRNA EST 01-JUL-1998

DEFINITION AF071399 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT9A, mRNA sequence.

ACCESSION AF071399

NID g3265144

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 240)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
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Fig. 5A-5

FEATURES Location/Qualifiers

source 1..240
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT9A"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 81 a 28 c 41 g 90 t
ORIGIN

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61 ggaagcctag aagagtgaat attttaaaa atgtgaggaa ctggtttgt attcagaagc
121 atataaacgt tgccttaatt tatatatgac gttctctatg aatatagcca aaatgatcga
181 tattttaac ccaaaaatca aacatttttg gtatcacgaac ctgccttca cggaggttta
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LOCUS AF071398 217 bp mRNA EST 01-JUL-1998
DEFINITION AF071398 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT7, mRNA sequence.

ACCESSION AF071398

NID g3265143

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 217)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

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FEATURES Location/Qualifiers

source 1..217
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT7"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 64 a 38 c 42 g 73 t
ORIGIN

1 tttttttt tttggagg aatcacgacg ggcggatcga acagtcttct ctcaattggc
61 aactgtctat atcattccgc aatcacatt cggatgtctt cgaaaaggca ttccaaagt



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Fig. 5A-6

121 attggagtcg tggaaagag ttctgcatga agtttaccca aaggcatttc atagtgaatt
181 aaattgtcaa actagtagtc agatcaataa aattttc

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LOCUS AF071397 219 bp mRNA EST 01-JUL-1998
DEFINITION AF071397 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT6, mRNA sequence.

ACCESSION AF071397

NID g3265142

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 219)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

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FEATURES Location/Qualifiers

source 1..219

/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT6"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 75 a 38 c 34 g 72 t

ORIGIN

1 tttttttt ttgagcaca aattattag aaattattgca taagcgaaaa tacaattga
61 cccgtagcaa aaaaatacat gtcgggaaaa tgagaaaaat ggtaataaa ttttaaaaa
121 aagtatataa ttctccaac aagctactgc atgtccctgt actacaatct ttccgacgg
181 attaccatct cgalcgcgga ttcggattct tcattgttg

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LOCUS AF071396 254 bp mRNA EST 01-JUL-1998

DEFINITION AF071396 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT5, mRNA sequence.

ACCESSION AF071396

NID g3265141

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 254)



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 11 of 43
Atty. Dkt.: 1579-315

Fig. 5A-7

AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
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FEATURES Location/Qualifiers
source 1..254
/organism="Caenorhabditis elegans"
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/db_xref="taxon:6239"
/clone="DDRT5"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 79 a 43 c 50 g 82 t
ORIGIN

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61 catttggat gatctcttc acagcattat ccagtgata ctatcctt ttcgtaagag
121 ttctgaaaa atgtccataa aaagtggtga atgactttg ttcactcga agcatacata
181 cgatcgaaac ggagaaatcg atagatcgaa tcaggataag tggggatact gtattgtcgg
241 atgaaaacat agac
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//

LOCUS AF071394 165 bp mRNA EST 01-JUL-1998
DEFINITION AF071394 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT47, mRNA sequence.

ACCESSION AF071394

NID g3265139

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 165)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
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JOURNAL Unpublished (1998)

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FEATURES Location/Qualifiers
source 1..165
/organism="Caenorhabditis elegans"



Inventor: FREEDMAN et al
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Fig. 5A-8

/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT47"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 38 a 37 c 20 g 70 t
ORIGIN

1 tttttttt ttctcaacc ccttcacata ataggcggaa aaccgattgt tgcgtgtact
61 tgtgtgtgtg ttattccct gacctatcca tattcccttc ttccaatct ctaaagatat
121 acctgaaac gagtttttg aatacttgat acattgtct tcac

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LOCUS AF071393 154 bp mRNA EST 01-JUL-1998
DEFINITION AF071393 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT41, mRNA sequence.

ACCESSION AF071393

NID g3265138

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 154)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

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FEATURES Location/Qualifiers

source 1..154

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/db_xref="taxon:6239"
/clone="DDRT41"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 49 a 27 c 40 g 38 t

ORIGIN

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121 ggagatcaaa aacatgttta cagctttggt ccta

//

LOCUS AF071392 264 bp mRNA EST 01-JUL-1998

DEFINITION AF071392 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT40, mRNA sequence.



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Fig. 5A-9

ACCESSION AF071392
NID g3265137
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 264)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
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Email: jonf@duke.edu.
FEATURES Location/Qualifiers
source 1..264
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/clone="DDRT40"
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/tissue_type="whole animal"
/dev_stage="mixed population"
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61 agatcttcaa tcaaaagctc ggtttctgt tgtttaaaga ttccgcagga aatgtctcc
121 gagagtcctg gtcttcaat taattctac gaggcgatca aagaatcga gaaaatggag
181 acaccagatg agcgattaac aaaagcacga gaaattatc gatcatcata tacgattgaa
241 ttccgtcgcg caatcgtcac actc
//
LOCUS AF071391 187 bp mRNA EST 01-JUL-1998
DEFINITION AF071391 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT4, mRNA sequence.
ACCESSION AF071391
NID g3265136
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 187)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
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JOURNAL Unpublished (1998)
COMMENT



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 14 of 43
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Fig. 5A-10

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FEATURES Location/Qualifiers

source 1..187
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT4"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 57 a 22 c 14 g 67 t
ORIGIN

1 aaattttat taaaataaaa taaacatgt ttgttgata ttatagcgtt aaagctgaaa
61 tgacaatgat tagaaaacca gcagagaata gagatgatgt tccttcggtt gttgtttcca
121 gtgaacactt gttgcgggtgg agcccgatt tagcgagtgg tagttttga tgtgattggt
181 tccaatc

//

LOCUS AF071389 267 bp mRNA EST 01-JUL-1998
DEFINITION AF071389 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT37, mRNA sequence.

ACCESSION AF071389

NID g3265134

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 267)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..267
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT37"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 66 a 75 c 54 g 72 t



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-11

ORIGIN

1 tgggtactcca cctacaagtt ctacaagttc tacgaggttg tcctgacga tccattccac
61 aaggctatccc gtcgtaaccc agacacccaa tggatcacca agcctagttc acaagcaccc
121 tgagcaaaaga ggactcacct ctgctggacg caagtctgtg gactcggaaa gggattgtt
181 ttctctgcta cccgcggagg atcccaacac caaagttttt ccaccgccca accgataaat
241 cttgtatttt tattttgttt tgggttt

//

LOCUS AF071388 292 bp mRNA EST 01-JUL-1998
DEFINITION AF071388 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT36, mRNA sequence.

ACCESSION AF071388

NID g3265133

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 292)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..292
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT36"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 73 a 57 c 51 g 111 t

ORIGIN

1 tttttttttt ttttccaac ccttcacat aaaggcggaa aaccgattgt tgcgtttact
61 tgttgtgtc gttattccc tgaggtatcc atattcgctt tctccaatc tctaaagata
121 taactgaaaa cgagttgtcg tcgaaatact tgatacatgt tgccttcatc ctgggtgatg
181 ttgtttcgca aattctcat actagtatg ataggatttg aatgagctgg cagcagtcac
241 ctttgaactc gaatttcaat attttctga tctctcatta agtgaatgaat aa

//

LOCUS AF071387 314 bp mRNA EST 01-JUL-1998
DEFINITION AF071387 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT35, mRNA sequence.

ACCESSION AF071387

NID g3265132

KEYWORDS EST.



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-12

SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 314)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..314
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT35"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 86 a 65 c 56 g 107 t

ORIGIN

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1 tctgagctag gaggtccagg aggaacaac ggaggaggtg ctggaaatgg tggattcgac
61 gattttgatg attggtctcg ccgttcgaa gaactgaaaa agattaagta atcatcacc
121 gacgttccat tcttattaa ctattgttt ctcttcacc caatttttt ttacgtgtc
181 ttttttga tcataaatga gacccccaaa aactagctgt tcttagtgc atacgttaaa
241 accccttag tcattgatta tcattgata cctcattat cgaaaaacct itcgacattc
301 atcaactagg tttt
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//

LOCUS AF071386 189 bp mRNA EST 01-JUL-1998
DEFINITION AF071386 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT34, mRNA sequence.

ACCESSION AF071386

NID g3265131

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 189)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Inventor: FREEDMAN et al
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Fig. 5A-13

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FEATURES Location/Qualifiers
source 1..189
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /clone="DDRT34"
 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 61 a 26 c 48 g 54 t

ORIGIN

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1 tctgagctag gggaccgaaat tcacaaatat ccaattgtta ctggatgggt gggatgtgga
61 cgatttaag gggacaagcc actgaagtgt atgtatttc attcgtaaa tatgaagatg
121 gagagagtg aatggggatt ttgctcttt tgcataatgg cctccctatg tacctgaaa
181 aaaaaaaaa
```

//

LOCUS AF071385 171 bp mRNA EST 01-JUL-1998
DEFINITION AF071385 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
 cDNA clone DDRT33D, mRNA sequence.

ACCESSION AF071385

NID g3265130

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 171)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
 Identification and cloning of new cadmium-responsive genes by
 differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..171
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /clone="DDRT33D"
 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 57 a 44 c 37 g 33 t

ORIGIN

```
1 tctgagctag gaaaggacgg agaagatgga gagaacggag ctgctggagc cgctgggac
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Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-14

61 aaggatctt ggcaccactg cccaccacca cgcactcccc aggatattaa ttactctc
121 tctaatttta gtgaatctca ttctaataa aagccgcccc aaaaaaaaaa a

LOCUS AF071383 289 bp mRNA EST 01-JUL-1998
DEFINITION AF071383 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT30, mRNA sequence.

ACCESSION AF071383

NID g3265128

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 289)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

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FEATURES Location/Qualifiers

source 1..289

/organism="Caenorhabditis elegans"

/strain="N2"

/db_xref="taxon:6239"

/clone="DDRT30"

/clone_lib="mRNA from cadmium-responsive gene"

/tissue_type="whole animal"

/dev_stage="mixed population"

BASE COUNT 68 a 64 c 63 g 94 t

ORIGIN

1 ttttttt ttgagcgag cggttatt ttgagtcgag ctgggttga gtgcctgct
61 gaacatgaag attgacaag aagacgatca gcagcaacag atgcgcagag tgcattct
121 tgcgggtgct gtctcaactg cagccgtcat ttcaagcatc gtgactctcc caatgatcta
181 ctctactct tcaacttttc caatcccat ttgatcattg aaaccgagtt ctgtaaaact
241 gtgctgtga tatgtgtgt cgaagttctc cacaagtcag gtgtaccct

LOCUS AF071382 162 bp mRNA EST 01-JUL-1998
DEFINITION AF071382 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT3, mRNA sequence.

ACCESSION AF071382

NID g3265127

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-15

REFERENCE 1 (bases 1 to 162)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT
Contact: Jonathan H. Freedman
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Email: jonf@duke.edu.
FEATURES Location/Qualifiers
source 1..162
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT3"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"
BASE COUNT 64 a 31 c 18 g 49 t
ORIGIN
1 ctcaccgca acaagtttc acgtggaac aacaacgaaa ggaacatcat ctctatctct
61 gctggtttc taatcattgt catttcagct ttaacgctat aatcaacaaa aacagtttat
121 ttatttttaa taaaaattta ttctgcaaaa aaaaaaaaaa aa
//
LOCUS AF071381 140 bp mRNA EST 01-JUL-1998
DEFINITION AF071381 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT29, mRNA sequence.
ACCESSION AF071381
NID g3265126
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 140)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT
Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers
source 1..140
/organism="Caenorhabditis elegans"
/strain="N2"



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 20 of 43
Atty. Dkt.: 1579-315

Fig. 5A-16

/db_xref="taxon:6239"
/clone="DDRT29"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 52 a 25 c 29 g 34 t
ORIGIN

1 tagggcctgg ttgtgacaa gtgcactaaa atggggcatg aatatcaca gcagagtgc
61 cttaccacaa gigtacttat taagagtcac ctgtgaagta tatgagacat ttcagttgcc
121 tgcccaaaaa aaaaaaa

//

LOCUS AF071380 308 bp mRNA EST 01-JUL-1998
DEFINITION AF071380 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT28, mRNA sequence.

ACCESSION AF071380

NID g3265125

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 308)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

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FEATURES Location/Qualifiers

source 1..308
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT28"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 88 a 70 c 73 g 77 t

ORIGIN

1 tagtaggca caggatgtac gaggaattc tactatttc gggctcacc acgaatcac
61 aataaccggt atttttagt ggtcccccga cgttgacctc ctggcgctc aggcactccg
121 ccgcgacatt ccgcgacacg cctacaatcc acgtgtcaat cgtcagatit gcggatcaat
181 aatggtgatg aaaggtggaa atactatat ggaatcatgt caaaggcatc aagctgaaca
241 attcgaagag ttgaatcggc gtcgacact ttgatccaag accgtaagaa attgaaagc
301 tattggig

//

LOCUS AF071379 238 bp mRNA EST 01-JUL-1998



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

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Fig. 5A-ENTER 1600/2900

DEFINITION AF071379 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT26, mRNA sequence.

ACCESSION AF071379

NID g3265124

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 238)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.

Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..238

/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT26"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 74 a 43 c 44 g 77 t

ORIGIN

1 tttttttt ttttgggg gaaatcacgg ctccgatgc aacagcttc tcctaatgg
61 caactgcta ttatccattc cgcaatcaca ttccgatgt tctcgaaaag gattcccaa
121 agttattgga gtactgtgaa agagttcgtc atgaagttaa cccaaaggac ttactatgt
181 gaattaaatt gtcaaacatg tagtcagatc aataaaattt tcgcgcgaa aaaaaaaa

LOCUS AF071378 324 bp mRNA EST 01-JUL-1998

DEFINITION AF071378 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT25A, mRNA sequence.

ACCESSION AF071378

NID g3265123

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 324)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.

Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 22 of 43
Atty. Dkt.: 1579-315

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Fig. 5A-1

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FEATURES

Location/Qualifiers

source 1..324
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT25A"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 102 a 70 c 73 g 79 t
ORIGIN

1 tagttaggca caggatgtac gaggaattc tactatttc gggctcacc acgaatcac
61 aataaccggc atttttagt ggtcccgca cgttgacct cttggcgct caggcactcc
121 gcgcgcacat tgcgcgcac gccacaac cagctgcaa tctcagatt tgcggatcaa
181 taatggtgat gaaaggtgga aatacgtata tggatcatgt tcaaaggcat caagctgaac
241 aatcgaga gttgaatcgg cgctgacaac ttttgcacc aagaccgtaa gaaattgga
301 agctattggt gaaaaaaaaa aaaa

//

LOCUS AF071377 272 bp mRNA EST 01-JUL-1998
DEFINITION AF071377 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT24, mRNA sequence.

ACCESSION AF071377

NID g3265122

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 272)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES

Location/Qualifiers

source 1..272
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT24"
/clone_lib="mRNA from cadmium-responsive gene"



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-19

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/tissue_type="whole animal"
/dev_stage="mixed population"
BASE COUNT 91 a 74 c 51 g 56 t
ORIGIN
1 tggtaactcca cgcagaaga agaaggtcat ccacaacacc gctactaccg atgacaagaa
61 gcttcaaaagc aatttgaaga aactctctgt caccaacatt ccaggaatcg aggaggtcaa
121 catgattaaag acgatggaac cgttatccac ttcaacaacc caaaagtcta aactctgtt
181 cccagccaat accttctctg tcacaggatc agccgataac aagtcagatc actgaaatgt
241 ctcccaggga atgctgaact ggtcagatgc ct
//

LOCUS AF071395 218 bp rRNA INV 30-JUN-1998
DEFINITION Caenorhabditis elegans strain N2 clone DDRT48, rRNA sequence.
ACCESSION AF071395
NID g3265140
KEYWORDS .
SOURCE Caenorhabditis elegans.
ORGANISM Caenorhabditis elegans
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE 1 (bases 1 to 218)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 218)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Direct Submission
JOURNAL Submitted (09-JUN-1998) Nicholas School of the Environment, Duke
University, Box 90328, Durham, NC 27708-0328, USA
FEATURES
Location/Qualifiers
source 1..218
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/tissue_type="whole animal"
/dev_stage="mixed population"
/note="from cadmium-responsive gene"
/clone="DDRT48"
misc_RNA 1..218
/note="similar to Caenorhabditis elegans rDNA tandem
repeats"
BASE COUNT 58 a 58 c 38 g 64 t
ORIGIN
1 tttttttt ttgcagaag cggggactaa aagcaagctt tcatccacc gatgatacaa
61 ggcgttttta gtaccttagg atcgactgac ccacatccaa ctactgtcc acgtggaacc
121 ctctccact tcatgtttca aggatcgaac ttgaatatt gctactacca tacgatctgc
181 actgacggaa agtcagccg agcctacctc atagttaa
//

LOCUS AF071390 238 bp rRNA INV 30-JUN-1998
DEFINITION Caenorhabditis elegans strain N2 clone DDRT38, rRNA sequence.
ACCESSION AF071390
```




Inventor: FREEDMAN et al
SN 09/437,450/Sheet 24 of 43
Atty. Dkt.: 1579-315

Fig. 5A-20

NID g3265135
KEYWORDS
SOURCE Caenorhabditis elegans.
ORGANISM Caenorhabditis elegans
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE 1 (bases 1 to 238)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 238)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Direct Submission
JOURNAL Submitted (09-JUN-1998) Nicholas School of the Environment, Duke
University, Box 90328, Durham, NC 27708-0328, USA
FEATURES Location/Qualifiers
source 1..238
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/tissue_type="whole animal"
/dev_stage="mixed population"
/note="from cadmium-responsive gene"
/clone="DDRT38"
misc_RNA 1..238
/note="similar to Caenorhabditis elegans rDNA tandem
repeats"
BASE COUNT 58 a 50 c 58 g 72 t
ORIGIN
1 tttttttt ttgtccggg cgggtgtac aaccggcagg gacgtaatca acgtgagctg
61 atgactcgcg ctactaggc attcctcgtt taaggcgaat aattacaata cctatccg
121 gacatggaag aattcaacg gttaccgat accttcaac acgggaaaaa taccgggtg
181 gacaccatta ggactgacag attgaaagtc ttgtcgatt tgg'tgg'tgg t'tg'catt
//
LOCUS AF071384 253 bp rRNA INV 30-JUN-1998
DEFINITION Caenorhabditis elegans strain N2 clone DDRT32, rRNA sequence.
ACCESSION AF071384
NID g3265129
KEYWORDS
SOURCE Caenorhabditis elegans.
ORGANISM Caenorhabditis elegans
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE 1 (bases 1 to 253)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 253)
AUTHORS Freedman, J.H. and Liao, H.-C.



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-21

TITLE Direct Submission
JOURNAL Submitted (09-JUN-1998) Nicholas School of the Environment, Duke
University, Box 90328, Durham, NC 27708-0328, USA
FEATURES Location/Qualifiers
 source 1..253
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /tissue_type="whole animal"
 /dev_stage="mixed population"
 /note="from cadmium-responsive gene"
 /clone="DDRT32"
 misc_RNA 1..253
 /note="similar to Caenorhabditis elegans rDNA tandem
 repeats"
BASE COUNT 45 a 60 c 69 g 79 t
ORIGIN
 1 tagggcctgt tgggtgatgc ttgtccggcg cagttctgtc tgcttgatac ttccgggtga
 61 tggcggacta gtgattgtgc ttcttcgcca cgtttctgg tctgtcttg gacctcggtt
 121 ctagtatcct gatcgtcat ctatcaacc tactgtaac ggtacgact agggaaatcg
 181 actgtctaataaaacagag gtgacagatg gtcttgcgg acgttaactg tcactgatt
 241 ctcccagtg cac
//
LOCUS AF071376 277 bp rRNA INV 30-JUN-1998
DEFINITION Caenorhabditis elegans strain N2 clone DDRT23, rRNA sequence.
ACCESSION AF071376
NID g3265121
KEYWORDS .
SOURCE Caenorhabditis elegans.
ORGANISM Caenorhabditis elegans
 Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
 Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE 1 (bases 1 to 277)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.
 Identification and cloning of new cadmium-responsive genes by
 differential display
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 277)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Direct Submission
JOURNAL Submitted (09-JUN-1998) Nicholas School of the Environment, Duke
University, Box 90328, Durham, NC 27708-0328, USA
FEATURES Location/Qualifiers
 source 1..277
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /tissue_type="whole animal"
 /dev_stage="mixed population"
 /note="from cadmium-responsive gene"
 /clone="DDRT23"
 misc_RNA 1..277



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Fig. 5A-22

/note="similar to *Caenorhabditis elegans* rDNA tandem repeats"

BASE COUNT 67 a 59 c 73 g 78 t
ORIGIN

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1 tttttttt ttggggggg gcgggtgta caaaggcag ggacgtaac aacgtgagct
61 gatgactcac actctaggc attctcgtt taagggaata attacaatac ccatccgga
121 catggaagaa ttcaacggt ttaccgatac ctttcggca acacgggaaa actcaccgg
181 tccggacacc attaggactg acagattgaa agctcttct cgatttggg gttgg'ggg
241 catggcgtt cttagttggt ggagtacaa tcactag
```

//

LOCUS AF071375 216 bp mRNA EST 30-JUN-1998
DEFINITION AF071375 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL5, mRNA sequence.

ACCESSION AF071375

NID g3265120

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 216)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..216

/organism="Caenorhabditis elegans"

/strain="N2"

/db_xref="taxon:6239"

/clone="VL5"

/clone_lib="mRNA from cadmium-responsive gene"

/tissue_type="whole animal"

/dev_stage="mixed population"

BASE COUNT 69 a 37 c 66 g 44 t

ORIGIN

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1 tagcaagtgc ggagacaaat gtgaatgcag tggagacaag tgttgtaga agtactgctg
61 tgaggaggcc agtgagaaaa aatgctgccc agctggatgt aaggagagact gcaagtgtgc
121 aaactgtcat tgtcagagc agaagcagtg cgagacaaga cccatcaaca ccagggaact
181 gctcgcgctc attaaatgt ttacagattg aatca
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//

LOCUS AF071374 356 bp mRNA EST 30-JUN-1998
DEFINITION AF071374 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL9, mRNA sequence.

ACCESSION AF071374



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Fig. 5A-23

NID g3265119
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 356)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT

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FEATURES Location/Qualifiers
source 1..356
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL9"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 126 a 70 c 55 g 105 t

ORIGIN

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1 caatcgatga gtatctcgt acaattaatg catgatgcaa ttggaatat tccgaggtag
61 gtaaaacggg gaacatcagc agatagatga atacagcgga tatcatatag gcacgcagaa
121 tatcaataaa atttcaaat ttcaaaaata tcataacgat talaacacgt agcagggaat
181 tttaaagcca ctgaataaaa tatagaataa tatatacaga cacacacaaat ctgatttca
241 gaacatttt agtaacgacg ttgaacttt ttgaagatt tcgccgagcc ttgatcact
301 ttgcagtcac caacttcac aactttctt tctctctctt cctctacatc gattgc
```

LOCUS AF071373 199 bp mRNA EST 30-JUN-1998
DEFINITION AF071373 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL3A, mRNA sequence.

ACCESSION AF071373

NID g3265118

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 199)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT



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Fig. 5A-24

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FEATURES Location/Qualifiers
source 1..199

/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL3A"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 55 a 31 c 20 g 93 t
ORIGIN

1 taaactctat gtttattgt ttttcaaat ttcaaatga aaattgaac ttcaattg
61 attagagctc ttgggttg acctctttt ttcaattgaac atctttacg tagctcac
121 ttgtatca acattacaa atgtgtttt gtaattatat gtaacaaatt tctatgaca
181 cctcatcaca tctctcat
//

LOCUS AF071372 326 bp mRNA EST 30-JUN-1998
DEFINITION AF071372 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL21A, mRNA sequence.
ACCESSION AF071372
NID g3265117
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 326)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT

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FEATURES Location/Qualifiers
source 1..326

/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL21A"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 76 a 61 c 59 g 130 t



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Fig. 5A-25

ORIGIN

```
1 cgtctccctt tttacttac ttgagggtgc gctttgtcaa ttgtacgtac ttatattag
61 caaacctctg ggttacctc tgccttttg taaatttgt tacacactt cttttggca
121 gtaaaagtg tttagcacac ttaacacac tgcacacac aaggtaatag tgagcccatc
181 gaggtttat aatgtcctt gatagtttaa agtltggag gatcgagcta ctttggtagt
241 ggaagccgt gttcttctc ttgtttgtt cgtatgattia cccaactatt tgatattttg
301 attaccgga ttatataata caccoc
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//

LOCUS AF071371 147 bp mRNA EST 30-JUN-1998
DEFINITION AF071371 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL20B, mRNA sequence.

ACCESSION AF071371

NID g3265116

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 147)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..147
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL20B"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 54 a 27 c 22 g 44 t

ORIGIN

```
1 tggcaatata cctagaaaga gtaaatatta tgacgtggca ataatacaga agcagtcgga
61 actacaactc acgaaacatt ttgaaagttt acctctgat ttctttgaa tgtttgtct
121 cacacaataa agaaaattct accgtac
```

//

LOCUS AF071370 285 bp mRNA EST 30-JUN-1998

DEFINITION AF071370 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL19, mRNA sequence.

ACCESSION AF071370

NID g3265115

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.



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Fig. 5A-26

ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 285)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..285
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL19"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 91 a 46 c 52 g 96 t

ORIGIN

1 cgtggcaata cacagaatat acacattgag atggttcgaa tggcaagag aaggtggtg
61 ctaatcattc tatatagcac aagccaaat ataattcga tggcgcgaa ttgtgatgg
121 tgaatggaat taacaaaatt ttctaaacgt ctccattcgg agtaatttt cgtttccct
181 ccacttttcg attatattg ttcttaga aaaagtattt attgcatcgg gtgctcattg
241 tctttgtgta gaataaaac tggttcactt cccaaaaaaa aaaaa

//

LOCUS AF071369 216 bp mRNA EST 30-JUN-1998
DEFINITION AF071369 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL13, mRNA sequence.

ACCESSION AF071369

NID g3265114

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 216)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Fig. 5A-27

FEATURES Location/Qualifiers

source 1..216
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL13"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 69 a 37 c 66 g 44 t
ORIGIN

1 tagcaagtcg gagacaaatg tgaatgcagt ggagacaagt gttgtgagaa gtactgctgt
61 gaggaggcca gtgagaaaaa atgctgtcca gctggatgta agggagactg caagtgtgca
121 aactgtcatt gtgcagagca gaagcagtcg ggagacaaga cccatcaaca ccagggaact
181 gctgcggctc attaaatgt ttcagagttg aatcta
//

LOCUS AF071368 142 bp mRNA EST 30-JUN-1998
DEFINITION AF071368 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL11, mRNA sequence.

ACCESSION AF071368

NID g3265113

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukarya; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 142)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..142
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL11"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 45 a 21 c 23 g 53 t
ORIGIN

1 gtgctggagt tgtttgtatt tcagaataaa taaataaaa tatgatttga gtagaatatt
61 aaaataaagt cttcacatt aaattatcaa ttgctggcc tcgaatatct tccagctggt
121 gattgcattc gtctactct tc



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Fig. 5A-28

//

LOCUS AF071367 84 bp mRNA EST 30-JUN-1998
DEFINITION AF071367 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL10, mRNA sequence.
ACCESSION AF071367
NID g3265112
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 84)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT
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FEATURES Location/Qualifiers
source I..84
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL10"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"
BASE COUNT 29 a 10 c 27 g 18 t
ORIGIN
1 tagcaagtcg ggagacaaat gtgaatgcag tggagacaga tgttgtaga agtactgctg
61 tgaggattcc agtgagaaaa aatc

//

LOCUS AF071366 217 bp mRNA EST 30-JUN-1998
DEFINITION AF071366 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL1, mRNA sequence.
ACCESSION AF071366
NID g3265111
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 217)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display



Inventor: FREEDMAN et al
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Fig. 5A-29

JOURNAL Unpublished (1998)
COMMENT

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FEATURES Location/Qualifiers

source 1..217
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL1"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 69 a 37 c 67 g 44 t
ORIGIN

1 tagcaagtgc ggagacaaat gtgaatgcag tggagacaag tgtgtgaga agtactgctg
61 tgaggaggcc agtgagaaaa aatgctgtcc agctggaigt aaggagagact gcaagtgtgc
121 aaactgtcat tgtgcagagc agaagcagtg cggagacaag acccatcaac accaggggac
181 tgctgcgctc cattaaaatg ttccagagtt gaacta
//

LOCUS AF071365 292 bp mRNA EST 30-JUN-1998
DEFINITION AF071365 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT22, mRNA sequence.

ACCESSION AF071365

NID g3265110

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 292)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..292
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT22"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"



Inventor: FREEDMAN et al
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Fig. 5A-30

/dev_stage="mixed population"
BASE COUNT 101 a 60 c 50 g 81 t
ORIGIN

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1 tgggtactca cacggacaaa tacatttagt tttaacagcc gccacgcgac acgcaacgcc
61 gtaaatctac caaggtacaa caacaacatg tcaagcacag acccattatc tatttgctgc
121 gaacgagatg gccctactcg tagtaatcga caattggact cttatccacc ggatcaccta
181 acctattttg atattaatat tcctattggg atcacagggt ttgcccgaaa atgtaattat
241 gaactgaatt gaaatgtatt ataaattagt ttttattggg aaaaaaaaaa aa
```

//

LOCUS AF071364 188 bp mRNA EST 30-JUN-1998
DEFINITION AF071364 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT21D, mRNA sequence.

ACCESSION AF071364

NID g3265109

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 188)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..188
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT21D"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 44 a 31 c 51 g 62 t

ORIGIN

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1 tataggttaa g'gatccggt ggataagagt ccaattgtcg attactacag tagaggccat
61 ctgcttcccg acaataaaga tatgggtctg tgcctgacat gttgtgttg taccttgggt
121 agatttacgg cagttgcgtg tcgttggcgg cttgtaaac taatgtatt ttccg'gtg
181 gagtacca
```

//

LOCUS AF071363 289 bp mRNA EST 30-JUN-1998
DEFINITION AF071363 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT20, mRNA sequence.

ACCESSION AF071363

NID g3265108



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Fig. 5A-31

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 289)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..289

/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT20"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 63 a 56 c 75 g 95 t

ORIGIN

1 tttttttt ttgtacat tatggcaat ggaggcactg tctggtccg tggggtcatg
61 gtgcattgga tcatgtata tcctatcctg gcttcaatc ccaatgcgtt tacagtcag
121 tgggcttgaa cgggcctagc tgagcttgga caaagttcct tgacagtcag gtgcgacaag
181 ctgtgacagtc agaattagg cacttgagg ctacaggtgc tcgtaattat ttgagagtt
241 ctgggcttcg ggactttac taggctaats taagacaact gggctctaa

//

LOCUS AF071362 214 bp mRNA EST 30-JUN-1998

DEFINITION AF071362 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT2, mRNA sequence.

ACCESSION AF071362

NID g3265107

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 214)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
Nicholas School of the Environment



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Atty. Dkt.: 1579-315

Fig. 5A-32

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FEATURES Location/Qualifiers
source 1..214
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT2"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 77 a 37 c 40 g 60 t

ORIGIN

1 aaatcatggc ggccggatgca acagtctct caattggcaa ctgtctatat cattccgcaa
61 cacatttcgg atgttctcga aaaggacttc ccaaagttat tggagtactg tgaagaggt
121 cgtcatgaag ttcccaaaag gactttacta tgtgaattaa attgcaaac tagtagtcag
181 atcaataaaa tttaacgtgg aaaaaaaaaa aaaa

//

LOCUS AF071361 322 bp mRNA EST 30-JUN-1998
DEFINITION AF071361 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT19, mRNA sequence.

ACCESSION AF071361

NID g3265106

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 322)

AUTHORS Freedman, J. H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers
source 1..322
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT19"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 102 a 77 c 70 g 73 t

ORIGIN

1 tagtgaccg tagagaagcc cagatatta aaatctaaag ggaaactgt tgaccagaag



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Fig. 5A-33

```
61 attagagccc agttgtctta gatagcctag taaaagtcgg gaagcccaga actctcaaaa
121 taattacgag cactgtagc ccacaagtcg ctaattctg actgtcaagc ttgtcgacc
181 gtaactgtcaa ggaactttgt caagctcagc taggcccgtt caagcccaca tgactgtaaa
241 cgattcggga ttagaagcca gtagagata tccatgatcc aatgcacat gacccacgga
301 accagatgtg ctattacat ag
```

//

LOCUS AF071360 228 bp mRNA EST 30-JUN-1998
DEFINITION AF071360 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT18, mRNA sequence.
ACCESSION AF071360
NID g3265105
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 228)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT

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FEATURES Location/Qualifiers
source 1..228
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT18"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 70 a 49 c 20 g 89 t
ORIGIN

```
1 tttttttt ttccccatt catcacac tatcatgtt tatattcaga cctattacct
61 gtccagaaaa actgagctga aaaaatcccg gacgagcagc tcttccatc tcaaaatctt
121 ccatcattc cccactcaat tcattgttt tgtctttgat ttcaaat ttgccttat
181 tatttatg ctaataag aaaactgtta cttgcaaaa aaaaaaaa
```

//

LOCUS AF071359 255 bp mRNA EST 30-JUN-1998
DEFINITION AF071359 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT1, mRNA sequence.
ACCESSION AF071359
NID g3265104
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 38 of 43
Atty. Dkt.: 1579-315

Fig. 5A-34

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE 1 (bases 1 to 255)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)
COMMENT

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FEATURES Location/Qualifiers

source 1..255
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT1"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 113 a 25 c 51 g 66 t
ORIGIN

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1 atcattcaag aaagcttatta tcagaaaaca taaatgacat agatcaagtg taaatcacat
61 atatataaag tggataaata tatatagtta aacggataag gaaattaatt aatgaatttt
121 gaaactggca gcgaaggatg aacagggaag ggcacatgtt aaaataaatg aatgtgtata
181 atttcgtgaa gagttagtta tgttagtgta tggcagccat gcagaatgag ccattgttcc
241 gaaaaaaaaa aaaaa
```

//

LOCUS AF071358 433 bp mRNA EST 30-JUN-1998
DEFINITION AF071358 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT17, mRNA sequence.

ACCESSION AF071358

NID g3265103

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 433)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-35

FEATURES Location/Qualifiers
source 1..433
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /clone="DDRT17"
 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 149 a 63 c 83 g 138 t
ORIGIN

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1  tggactaag ggccaatac tgagctttg cagggcgga tcaagataa agagaaacta
61  ttttgacgg taaaataac caaatttaca cggcgagtc aatcaaaaa ttcatctg
121 aacagcaaa tacatcggag aattgctgga aggaagcact gatgaaacta aattaactgc
181 tggatgcata ggaaaaacgt caagattgac gtggagttgg agagaaggac tatgtttgga
241 tggttactaa gattttgtaa ctgggtgacaa taaggacatc acctttctaa ctaacttaa
301 tctttttta cttctttct tctgaattaa ttgtgttta aggcgaattc tatgtttcag
361 aatttatta cgtttgctt tcatgttta attgtaaaag taagcaattt ttccaccgta
421 aaaaaaaaa aaa
```

//

LOCUS AF071357 933 bp mRNA EST 30-JUN-1998
DEFINITION AF071357 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
 cDNA clone DDRT16FC, mRNA sequence.

ACCESSION AF071357

NID g3265102

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 933)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
 Identification and cloning of new cadmium-responsive genes by
 differential display

JOURNAL Unpublished (1998)

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..933
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /clone="DDRT16FC"
 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 275 a 190 c 171 g 297 t
ORIGIN



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-36

1 catgcactt tttttttt tttttttt ctgtctcaag tatgttggat tcatgtttga
61 ttattactgc tgcgctgttt ggagccgctg tcatttactt gaaaaatttc ttactgttc
121 ctatgattaa accaaaacct gatattcaca aaaaagacta caaaaaggat gtatgtctac
181 tcatcagat gaagagactc aagaactgtc cgaactgtc ccccttctgc atgaaaaatc
241 agattcttg tagaattctc aagattcctt acgagattat cacatgcacc tctgaacgct
301 ctcggaatgg attggtccct ttctgtgaac tcaatggaga gcacattgct gattctgatc
361 ttatcgaat gcgcttgaga tcacatttta aaattccgtc gttccaact gagctgaaa
421 ctcaatctgt tgcctaaagc aagtttgacg atcaccattt gttctcgtta ctatagcat
481 taaaattgc tctgcacgaa ttctacaaaa ccattatcga aataatcggt ctcccaacct
541 tctgaattt ccttctcatg ccccttttga aggcataaat cgggaaaaat gtctacaaca
601 aatgtcaggg agccatttga gattttgaat tgaatgagct cgacgagatt ctccacagag
661 atttgcgaat cgtagagaaac accttggcca agaaaaagt tctttcggg gaggaatca
721 cggcgcgga tgcacacgtc ttcttcaat tggcaactgt ctattatcca ttccgcaatc
781 acatttcgga tttctcga aaggacttcc caaagtattt ggagttactgt gaaagagttc
841 gtcatgaat ttacccaag gactttacta tgtgaattaa attgtcaaac tagtagtcag
901 atcaataaaa ttctacgtgg caaaaaaaaa aaa

//

LOCUS AF071356 238 bp mRNA EST 30-JUN-1998
DEFINITION AF071356 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT16, mRNA sequence.

ACCESSION AF071356

NID g3265101

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 238)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..238

/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT16"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 77 a 42 c 45 g 74 t

ORIGIN

1 tttttttt ttgggagga aatcacggcg gcggatgcaa cagcttctc tcaattggca
61 actgtctatt atccattccg caatcattt tctgattgtc tcaaaaagga ctcccaaaag
121 ttattggagt actgtgaaag agttgctcat gaagtttacc caaaggactt tactatgtga



Inventor: FREEDMAN et al
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Fig. 5A-37

181 attaaattgt caaacatga gtcgatcaa taaaattcta cgtggcaaaa aaaaaaaa
//

LOCUS AF071355 248 bp mRNA EST 30-JUN-1998
DEFINITION AF071355 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT15, mRNA sequence.
ACCESSION AF071355
NID g3265100
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 248)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
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FEATURES Location/Qualifiers
source 1..248
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT15"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"
BASE COUNT 67 a 46 c 31 g 104 t
ORIGIN
1 tttttttt ttgcgatg tgaatacta atatttata attttcttta attttcttg
61 ttaagtgtgt attataggt tgttgagatt ttttgcctg taatttgcga actgtgattc
121 atgtatgtac tatatgaacc gaaacccct cccgtcatat acaacagtta gtaaaacatt
181 ttaatcccat atttctcatt cccaacactc ttacaggttt tgcattcagca gcagcagtg
241 aaacacaa
//

LOCUS AF071354 226 bp mRNA EST 30-JUN-1998
DEFINITION AF071354 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT12, mRNA sequence.
ACCESSION AF071354
NID g3265099
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 226)



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-38

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..226
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT12"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 68 a 38 c 35 g 85 t

ORIGIN

```
1 tttttttt ttgttaaca aagaactgag cactctatgg ttatcaagt ctatgtat
61 ccggtatgcc tactgtatcg tacatccatc tgcacgtaa tgcattatg atcatgagt
121 cccaaaggtc ttaacttga caaagggtga atagatatat alccttattt ggccactata
181 atatgttcag aattatgact gatcgataca tatgatcaaa gttaca
```

//

LOCUS AF071353 212 bp mRNA EST 30-JUN-1998

DEFINITION AF071353 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT10, mRNA sequence.

ACCESSION AF071353

NID g3265098

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditidae;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 212)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..212
/organism="Caenorhabditis elegans"
/strain="N2"



Fig. 5A-39

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/db_xref="taxon:6239"  
/clone="DDRT10"  
/clone_lib="mRNA from cadmium-responsive gene"  
/tissue_type="whole animal"  
/dev_stage="mixed population"
```

BASE COUNT 68 a 35 c 34 g 75 t
ORIGIN

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1 ttcgatacag gaactacatt tacatctgtt tcaacatc tacaatacat aacatactca  
61 atccttcagg ctctgaagga ttttgagtc gatatactgt aacaagctcg ggaacataa  
121 gtacattttt tggagctatc ttttta gcttttct tttgtctctt tgaatgagtt  
181 ttgaatgaa ttgtctgtgc aaaaaaaaaa aa
```

//